

WHAT I CLAIM IS:

1. ~~A communication system comprising:~~

digital means for generating a plurality of digital signals;

signature means for generating a signature signal in response to each of the plurality of digital signals generated with said digital means, where each of the signature signals has a signature that is different from the signature of each of the other signature signals;

multiplexing means for generating a multiplexed signature signal by combining the signature signals generated with said signature means;

transmitting means for transmitting the multiplexed signature signal generated with said multiplexing means to a remote location;

receiving means located at the remote location for receiving the multiplexed signature signal transmitted with said transmitting means; and

demultiplexing means for generating a plurality of digital signals each corresponding to a different one of the plurality of digital signals generated with said digital means.

2. The system as set forth in claim 1 above, wherein said system provides for communication of digital signals to the remote location; wherein said digital means includes means for generating the plurality of digital signals to be communicated to the remote location; and wherein said signature means includes means for generating the signature signal in response to each of the plurality of digital signals generated with said digital means by modulating the digital signals with a signature signal for communication to the remote location.

3. The system as set forth in claim 1 above, wherein said system provides for location of said transmitting means; said system further comprising means for processing the digital signals generated with said demultiplexing means to determine the location of said transmitting means.

4. The system as set forth in claim 1 above, wherein said system provides for location of said receiving means; said system further comprising means for processing the digital signals generated with said demultiplexing means to determine the location of said receiving means.

5. The system as set forth in claim 1 above, wherein said digital means includes a stored program digital computer for generating the plurality of digital signals in response to processing of digital information.

6. The system as set forth in claim 1 above, wherein said signature means includes a plurality of signature generators each generating a signature different from the signatures of the other signature generators in response to the plurality of digital signals generated with said digital means.

7. The system as set forth in claim 1 above, wherein said multiplexing means includes means for generating the multiplexed signature signal by combining the signature signals generated with said signature means with wired circuit connections.

8. The system as set forth in claim 1 above, wherein said transmitting means includes a radio transmitter for transmitting the multiplexed signature signal generated with said multiplexing means to the remote location as radio signals.

9. The system as set forth in claim 1 above, wherein said transmitting means includes a seismic transmitter for transmitting the multiplexed signature signal generated with said multiplexing means to the remote location as seismic signals.

10. The system as set forth in claim 1 above, wherein said transmitting means includes an underwater acoustic transmitter for transmitting the multiplexed signature signal generated with said multiplexing means to the remote location as underwater acoustic signals.

11. The system as set forth in claim 1 above, wherein said demultiplexing means includes a plurality of digital correlators each for generating a different one of the plurality of digital signals and each corresponding to a different one of the plurality of digital signals generated with said digital means.

12. The system as set forth in claim 1 above, wherein said digital means includes means for generating each of the plurality of digital signals as serial combinations of digital bits.

13. A communication system comprising:

a plurality of signature generators each for generating a signature signal, where each of the signature signals has a signature that is different from the signature of each of the other signature signals;

a plurality of transmitters each connected to a different one of said plurality of signature generators for transmitting the signature signal generated with the signature generator to which it is connected to a remote location;

a receiver located at the remote location for receiving the signature signals transmitted with said plurality of transmitters; and

demultiplexing means for generating a plurality of output signals each corresponding to a different one of the plurality of signature signals generated with said plurality of signature generators.

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14. ~~The system as set forth in claim 13 above, wherein said system provides for communication of signature signals to the remote location.~~

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15. ~~The system as set forth in claim 13 above, wherein said system provides for location of said plurality of transmitters; said system further comprising means for processing the plurality of output signals generated with said demultiplexing means to determine the location of a least one of said transmitters.~~

16. The system as set forth in claim 13 above, wherein said system provides for location of said receiver; said system further comprising means for processing the plurality of output signals generated with said demultiplexing means to determine the location of said receiver.

17. The system as set forth in claim 13 above, wherein each of said plurality of transmitters includes a radio transmitter for transmitting the signature signal generated with the signature generator to which it is connected to the remote location as a radio signal.

18. The system as set forth in claim 13 above, wherein each of said plurality of transmitters includes a seismic transmitter for transmitting the signature signal generated with the signature generator to which it is connected to the remote location as a seismic signal.

19. The system as set forth in claim 13 above, wherein each of said plurality of transmitters includes an acoustic transmitter for transmitting the signature signal generated with the signature generator to which it is connected to the remote location as an acoustic signal.

20. The system as set forth in claim 13 above, wherein said demultiplexing means includes a plurality of digital correlators each for generating a different one of the plurality of output signals and each corresponding to a different one of the plurality of signature signals generated with said plurality of signature generators.

21. A communication system comprising:
a digital processor for generating a plurality of digital signals;
a signature generator for generating a signature signal in response to each of the plurality of digital signals generated with said digital processor, where each of the signature signals has a signature that is different from the signature of each of the other signature signals;
a multiplexor for generating a multiplexed signature signal by combining the signature signals generated with said signature generator;
a transmitter for transmitting the multiplexed signature signal generated with said multiplexor to a remote location;
a receiver located at the remote location for receiving the multiplexed signature signal transmitted with said transmitter; and
demultiplexor for generating a plurality of digital signals each corresponding to a different one of the plurality of digital signals generated with said digital processor.

22. The system as set forth in claim 21 above, wherein said system provides for communication of digital signals to the remote location; wherein said digital processor includes means for generating the plurality of digital signals to be communicated to the remote location; and wherein said signature generator includes means for generating the signature signal in response to each of the plurality of digital signals generated with said digital means by modulating the digital signals with a signature signal for communication to the remote location.

23. The system as set forth in claim 21 above, wherein said system provides for location of said transmitter; said system further comprising means for processing the digital signals generated with said demultiplexor to determine the location of said transmitter.

24. The system as set forth in claim 21 above, wherein said system provides for location of said receiver; said system further comprising means for processing the digital signals generated with said demultiplexor to determine the location of ~~said receiver.~~

25. The system as set forth in claim 21 above, wherein said digital processor includes a stored program digital computer for generating the plurality of digital signals in response to processing of digital information.

~~26. The system as set forth in claim 21 above, wherein said signature generator includes a plurality of signature generators each generating a signature different from the signatures of the other signature generators in response to the plurality of digital signals generated with said digital processor.~~

27. The system as set forth in claim 21 above, wherein said multiplexor includes means for generating the multiplexed signature signal by combining the signature signals generated with said signature generator with wired circuit connections.

28. The system as set forth in claim 21 above, wherein said transmitter includes a radio transmitter for transmitting the multiplexed signature signal generated with said multiplexing means to the remote location as radio signals.

29. The system as set forth in claim 21 above, wherein said transmitter includes a seismic transmitter for transmitting the multiplexed signature signal generated with said multiplexor to the remote location as seismic signals.

30. The system as set forth in claim 21 above, wherein said transmitter includes an underwater acoustic transmitter for transmitting the multiplexed signature signal generated with said multiplexor to the remote location as underwater acoustic signals.

31. The system as set forth in claim 21 above, wherein said demultiplexor includes a plurality of digital correlators each for generating a different one of the plurality of digital signals and each corresponding to a different one of the plurality of digital signals generated with said digital processor.

32. The system as set forth in claim 21 above, wherein said digital processor includes means for generating each of the plurality of digital signals as serial combinations of digital bits.

33. A communication system comprising:

a plurality of signature generators each for generating a signature signal, where each of the signature signals has a signature that is different from the signature of each of the other signature signals and where all of the signature signals overlap therebetween;

a plurality of transmitters each connected to a different one of said plurality of signature generators for transmitting the signature signal generated with the signature generator to which it is connected to a remote location;

a receiver located at the remote location for receiving the overlapping signature signals transmitted with said plurality of transmitters; and

a demultiplexor for generating a plurality of output signals each corresponding to a different one of the plurality of overlapping signature signals generated with said plurality of ~~signature generators.~~

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34. ~~The system as set forth in claim 33 above, wherein said system provides for communication of signature signals to the remote location.~~

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35. ~~The system as set forth in claim 33 above, wherein said system provides for location of said plurality of transmitters; said system further comprising means for processing the plurality of output signals generated with said demultiplexor to determine the location of a least one of said transmitters.~~

36. The system as set forth in claim 33 above, wherein said system provides for location of said receiver; said system further comprising means for processing the plurality of output signals generated with said demultiplexor to determine the location of said receiver.

37. The system as set forth in claim 33 above, wherein each of said plurality of transmitters includes a radio transmitter for transmitting the signature signal generated with the signature generator to which it is connected to the remote location as a radio signal.

38. The system as set forth in claim 33 above, wherein each of said plurality of transmitters includes a seismic transmitter for transmitting the signature signal generated with the signature generator to which it is connected to the remote location as a seismic signal.

39. The system as set forth in claim 33 above, wherein each of said plurality of transmitters includes an acoustic transmitter for transmitting the signature signal generated with the signature generator to which it is connected to the remote location as an acoustic signal.

40. The system as set forth in claim 33 above, wherein said demultiplexor includes a plurality of digital correlators each for generating a different one of the plurality of output signals and each corresponding to a different one of the plurality of signature signals generated with said plurality of ~~signature generators.~~

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